Measurement of the cross section in $t\bar{t} + \text{jets}$ using a multivariate kinematics fit method with the ATLAS detector

BABAK ABI, Oklahoma State University, ATLAS COLLABORATION — A measurement of the production cross-section for $t\bar{t}$ events with an additional jet ($t\bar{t} + \text{jet}$) is presented, using 5.0 fb$^{-1}$ of data collected by the ATLAS detector at $\sqrt{s} = 7$ TeV at the LHC in 2011. The measurement is performed in the semileptonic decay channel ($t\bar{t} \rightarrow \ell\nu b b\bar{b} j j$) with electrons or muons in the final state. A multivariate kinematic approach is used in order to extract the background events, a 2D likelihood is formed to simultaneously measure the $t\bar{t} + \text{jet}$ and inclusive $t\bar{t}$ cross-sections.

Babak Abi
Oklahoma State University

Date submitted: 06 Jan 2012

Electronic form version 1.4